A Helping Hand for BIRDS

By Larry Williams

In the late 1800s naturalist John James Audubon reported that the red-cockaded woodpecker (RCW) was abundant throughout pine forests of the Southeast. The old growth pine habitat these birds needed was still abundant, although forests were being cut for lumber and settlement.

By 1940, most of the bird's habitat was gone. It would still be 30 years until people really took action to protect the species. Now, after more than 30 years of protection under the Endangered Species Act, their future seems secure. Noxubee National Wildlife Refuge near Starkville has played a key role in this species' recovery.

The RCW is a fairly small bird, roughly the size of a cardinal. Its back is barred with black and white horizontal stripes, and it has a black cap and nape encircling large white cheek patches. The name "red-cockaded" comes from a patch of red feathers found only on the sides of the male's head. This cockade is displayed during the breeding season or in episodes of territorial defense.

The connection between RCWs and old pine trees is complex. RCWs need mature pine stands, greater than 70 years old, to construct cavities. Mature pines develop red heart disease, caused by a fungus that attacks the heartwood. This makes it decay and soften, while the outer wood remains alive and solid. RCWs then excavate a cavity in the soft wood.

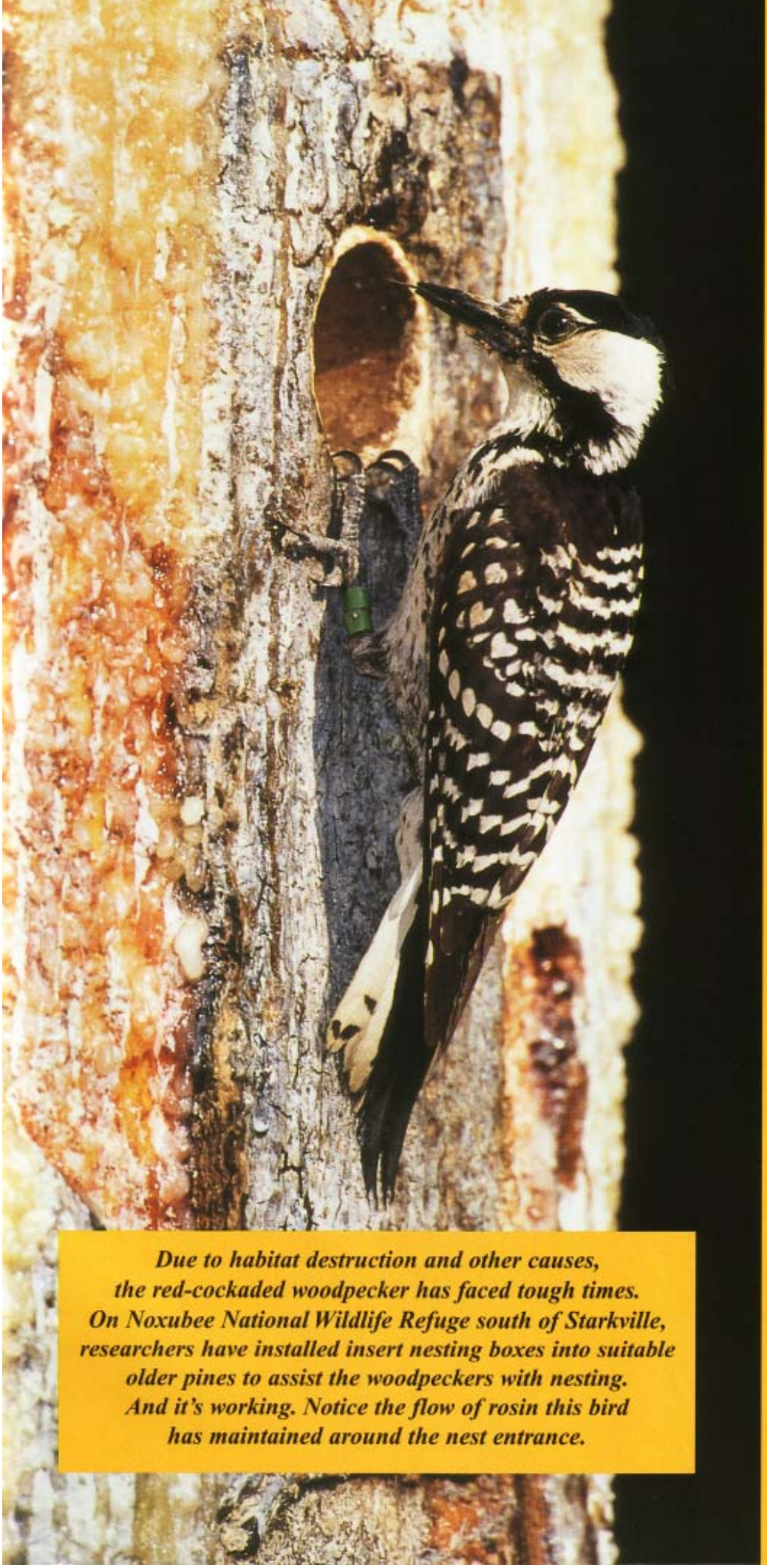
Because the trees remain alive, the resin or pine sap continues to flow. By constantly pecking to the inner bark, RCWs maintain a flow of sticky resin around the cavities. This deters snakes and other would-be predators that cannot climb past this barrier.

RCWs also have a unique cooperative breeding system. Male and female work together incubating eggs and raising young. Males born last year stay around to help with these chores. Cooperative breeding is rare and occurs in only a handful of the world's bird species. Biologists speculate this type of breeding not only helps more nestlings survive, it also teaches helper birds about parenting.

Declines in RCW populations have been linked directly to habitat loss. Harvesting virgin pine forests eliminated more than 95 percent of their habitat. Though the Southeast is still covered in extensive pine forest, little of it reaches the age that RCWs need. Unfortunately, economics usually dictate harvesting pines before they reach 50 years of age. The vast majority of remaining RCWs occur on government-owned lands where economics is not the driving force in forest management.

Fire is another important ingredient for RCW habitat. Fires, caused by both lightning and humans, occurred often in the virgin forests where these birds evolved. Fires burned through upland pine forests, killing shrubs and small trees, but leaving larger pines intact thanks to their thick insulating bark.

The result was a park-like forest



Due to habitat destruction and other causes, the red-cockaded woodpecker has faced tough times. On Noxubee National Wildlife Refuge south of Starkville, researchers have installed insert nesting boxes into suitable older pines to assist the woodpeckers with nesting. And it's working. Notice the flow of rosin this bird has maintained around the nest entrance.

with large trees and mostly grasses growing below. This open habitat is preferred by RCWs, likely because it allows them to see predators easily. However, as the Southeast was settled, the frequency of fires greatly decreased, and again the birds lost habitat.

In 1970 Dr. Jerome Jackson, then a professor at Mississippi State University, began one of the earliest life history studies of RCWs. He captured and banded the woodpeckers on Noxubee Refuge so he could record their behavior. He discovered much about how they socialized, their cooperative breeding, how far they travel, and what habitats they prefer. In 1979 he headed a team of biologists who developed a recovery plan for the species.

Beginning in 1990, Noxubee Refuge became an experimental proving ground for RCW management. This research continues, and now the Refuge is nationally known as a place to learn about RCWs.

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Throughout their range, lack of cavities was identified as the most limiting factor for RCWs. Biologists everywhere experimented with several types of artificial cavities. Noxubee Refuge settled on one called an "insert."

An insert is a pre-made box with a cavity built into it. A chainsaw is used to remove a box-like plug from the tree, and the insert is placed in

the opening. After smoothing over the front with wood putty, the result is hard to tell from a natural cavity. By placing several of these inserts close together, a whole new cluster can be created.

One main reason RCWs lose cavities is because they sometimes are taken over by other wildlife. Red-bellied woodpeckers are an example. Often, pileated woodpeckers enlarge the cavities while looking for food. When this occurs, biologists place U-shaped metal plates over the cavities to prevent further damage. Obviously, after a little hammering on one of these plates, other woodpeckers realize they're getting nowhere, and they decide to move on.

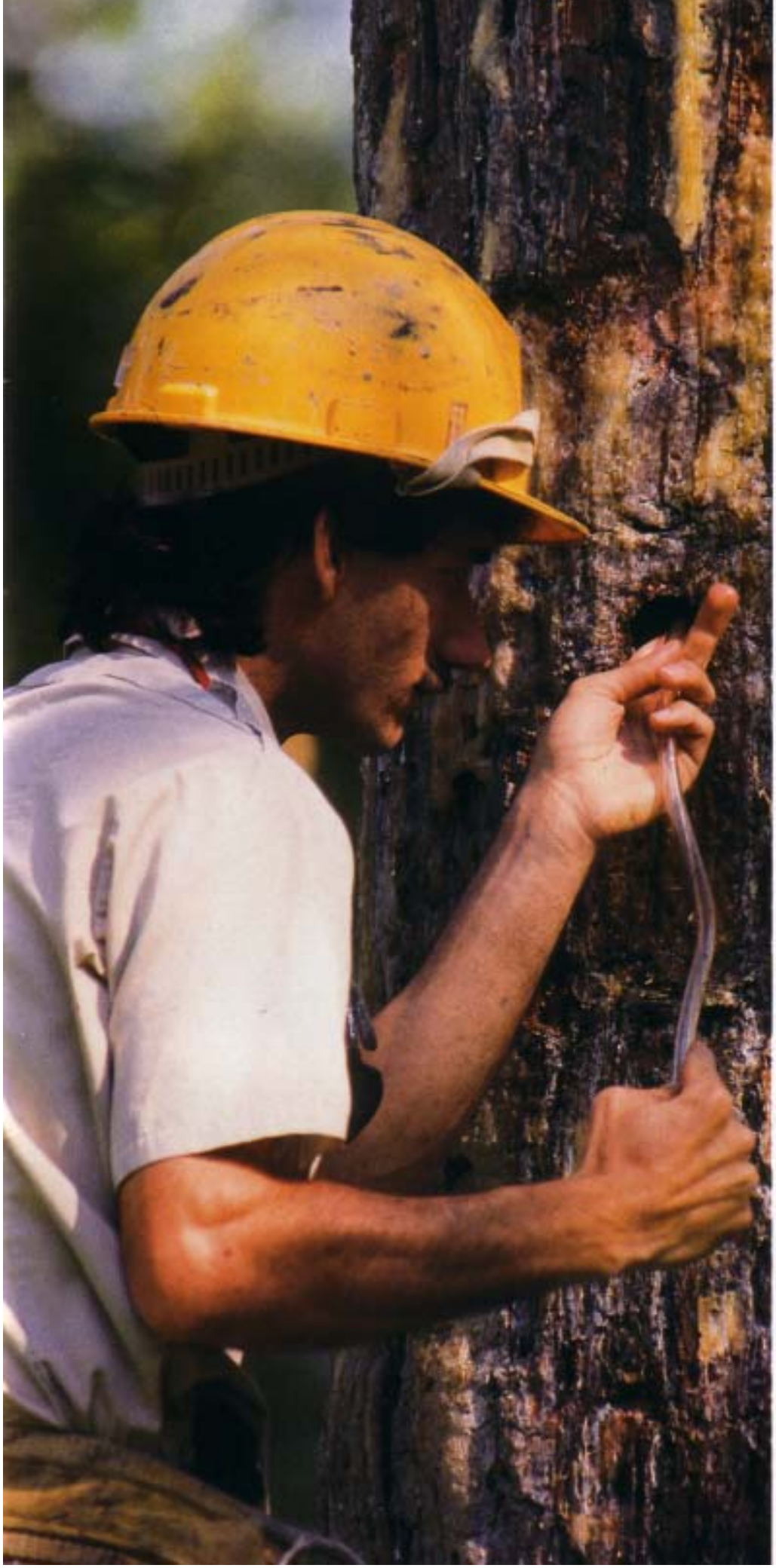
Flying squirrels are another cavity competitor found abundantly in Mississippi's pine forests. They, too, den in cavities, often with three or more in one cavity. Their varied diet includes nuts, fruits, and insects, but they also eat bird eggs and nestlings.

Keeping flying squirrels out of RCW cavities is difficult. Although they cannot actually fly, they glide with amazing accuracy. From a nearby tree perhaps 40 or more feet away, a flying squirrel can glide directly to the cavity entrance, avoiding all the sticky resin that deters other predators.

To combat these flying critters, Refuge biologists use "squirrel excluders." These sections of slick metal flashing are arranged around the cavity entrance to leave just enough room for the RCWs to perch, but not enough that squirrels can get a foothold.

Perhaps the most aggressive RCW predators are rat snakes. These nimble reptiles are excellent climbers and spend as much as one-third of their time in trees. Refuge biologists find them in RCW cavities as high as 50 feet. The resin flowing around

Staff members at Noxubee strap sectional ladders around trees where red-cockaded woodpeckers are nesting. After climbing to the entrance hole, right, biologist David Richardson inserts a small coil of wire attached to a rubber hose. This is used to snare the nestling birds so they can be pulled free of the nest, banded, and returned.



a cavity is a fair deterrent to the snakes, but not always effective.

Some snakes still reach the cavities, where they can eat eggs, nestlings, and sometimes adults. Refuge staff helped develop a way to place metal flashing around the base of the tree to further deter snakes. They discovered the flashing must be at least 36 inches high or the snakes will climb over it.

In spite of the work creating and protecting RCW cavities, there is no substitute for habitat management. While good habitat starts with providing plenty of old pine trees, it requires fire to maintain the open park-like forests. Prescribed fire is the most cost effective way to maintain this open environment.

Noxubee Refuge burns upwards of 8,000 acres each year. This burning is not done solely for RCWs. It has tremendous benefits for quail, turkey, deer, and numerous other wildlife and plant species.

Assessing RCW populations requires biologists to monitor their nests. Looking at the number of eggs laid and nestlings fledged tells biologists how the overall population is doing. Until recently, monitoring nests meant climbing with sectioned ladders and using a mirror and light to look inside the cavities. This job was laborious and sometimes dangerous since some cavities are more than 50 feet high.

The Refuge staff worked with a video engineer to develop a "peeper scope" to make this task easier. The device is actually a mini-video camera mounted atop an extendable pole. The camera can be inserted into the cavity high in the tree, while the image is viewed on a color monitor down below. This invaluable tool allows biologists easy viewing of eggs, nestlings, and anything else in the cavity.

Sometimes it is necessary to band nestling RCWs to track their movements. Banding requires a biologist to climb to the cavity and insert flexible wire loops attached to a length of plastic tubing. Covering the open-

ing with their hand casts a shadow on the nestling, as if the parent was coming back to feed them. This triggers nestlings to raise their heads and beg in anticipation of food.

By pulling the wire loops snug, the biologist snares the nestlings. Keeping slight tension on the wires, they gently pull the nestlings out, place them in a sack, and lower them to the ground. The technique sounds traumatic, but it has been proven safe, as the limber nestlings are resilient to injury.

A person on the ground weighs and measures the nestlings and places a unique set of colored plastic bands on their legs. These bands allow biologists to use a spotting scope later and determine the bird's exact identity. The nestlings are placed back in the sack, hauled up by a rope, and returned to the cavity when banding is finished.

Biologists are relocating RCWs on the refuge and other public lands throughout the state to help populations of this woodpecker grow. Usually these autumn relocations are done at night. They involve catching a young male and female from two separate groups, then releasing them together in a new cluster.

If all goes well, they become acquainted, form a mating pair, and raise young of their own. This avian match-making works about 40 percent of the time. It is the best way biologists have found to establish new RCW groups.

What are the benefits of all this effort and experimenting with RCWs? Well, over the past 12 years Noxubee Refuge has increased its RCW groups from 18 to 45, an increase of more than 150 percent. At this rate, the Refuge could reach its goal of 88 groups within 15 years. Such increases have become common at many federal and state landholdings managing for RCWs.

These types of population gains are exactly what is needed to bring this charismatic little woodpecker back from near extinction. The outlook for RCWs is much brighter now, thanks to the care of numerous biologists and land managers throughout the South. The staff at Noxubee Refuge is proud to lend a helping hand.

Larry Williams is a biologist and the deputy refuge manager at Noxubee National Wildlife Refuge.

A Helping Hand for Birds

After nestling red-cockaded woodpeckers are taken from the nest, researchers place a small, numbered aluminum band and several color-coded plastic bands on the legs of each bird, left. Fine mesh nets are used at night to capture birds that will be released in other areas. Here, Richardson uses a fine touch honed with years of experience to remove a bird from the net.